BACnet Gateway
MIM-B17

Air Conditioner
installation manual

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imagine the possibilities

Thank you for purchasing this Samsung product.

Ⓔ DB98-32390A(3)

SAMSUNG

Safety Precautions

This installation manual describes how to install the BACnet Gateway. For installation of other optional accessories, refer to the appropriate installation manual.

⚠ WARNING

- ◆ Read carefully this installation manual before installation and check if the BACnet Gateway is installed correctly after installation.
- ◆ Do not attempt to install or repair this BACnet Gateway by yourself.
- ◆ This BACnet Gateway contains no user-serviceable parts. Always consult authorized service personnel for repairs.
- ◆ When moving, consult authorized service personnel for disconnection and installation of the BACnet Gateway.
- ◆ Ensure that the wall is strong enough to support the weight of the BACnet Gateway.
- ◆ Must install the BACnet Gateway with rated power supply.
- ◆ The BACnet Gateway must be installed according to the national electrical rules by an installation specialist.
- ◆ If you wish to uninstall the BACnet Gateway, consult an authorized installation center.

⚠ CAUTION

- ◆ Do not use inflammable gases near the BACnet Gateway.
- ◆ Do not install the BACnet Gateway in a location where it will come into contact with combustible gases, machine oil, sulphide gas, etc.
- ◆ Avoid locations where acid/alkali solution or special spray is used.
- ◆ Choose a location that is dry and sunny, but not exposed to direct sunlight. Suitable temperature is between 0°C(32°F) and 39°C(102.2°F).
- ◆ Do not spill water into the BACnet Gateway.
- ◆ Do not apply tensile strength to the cable to avoid cable damage.
- ◆ Do not press the buttons with a sharp object.
- ◆ Do not connect the power cable to the control terminal.
- ◆ If the BACnet Gateway is installed in a hospital or other special places, it should not affect other electronic devices.

❊ BACnet is a registered trademark of American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE).

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Before Installing the BACnet Gateway

Checks before installation

1 BACnet Gateway IP

- ◆ A public IP is needed to access the BACnet Gateway over the internet.
  (One public IP is needed for each BACnet Gateway)
- ◆ A private IP may be used if the BACnet Gateway need not be accessed over the internet.

2 Network related equipments

3 Installation connection wire

- ◆ The LAN cable and the communication cables from centralized controllers/interface modules must be installed in such a way that the wires can be connected to the BACnet Gateway with ease.

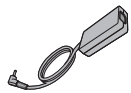
Note

- ◆ ***The BACnet Gateway is a server and supports static IP. To access the BACnet Gateway through the internet or with BMS System, the BACnet Gateway address, which is the IP address, must be known.***
- ◆ ***A static IP service from an internet service provider must be used if xDSL (ADSL, VDSL) is being used for internet connection. (Static IP costs more than dynamic IP.)***
- ◆ ***BACnet Gateway should be situated in the same subnet as BMS system.***

Accessories

Make sure you have each item. Supplied items may vary depending on your country or service provider.

Item	BACnet Gateway
Quantity	1
Shape	

Adapter	Power cable	M4x16 Screw
1	1	6
		

User's manual	Installation manual	Cable tie
1	1	1

CAUTION

- ***The BACnet Gateway must be installed by a trained installer.***
- ***Ensure the main power is turned off before installing the BACnet Gateway.***
- ***Be sure to use adapter and power cable we provide.***
- ***The power cable and the communication cable must be installed according to the national electrical wiring regulations.***

Main Parts

BACnet Gateway Exterior

LCD Display

Shows current time and IP address. Various messages will be displayed depending on button input.

LCD operation button

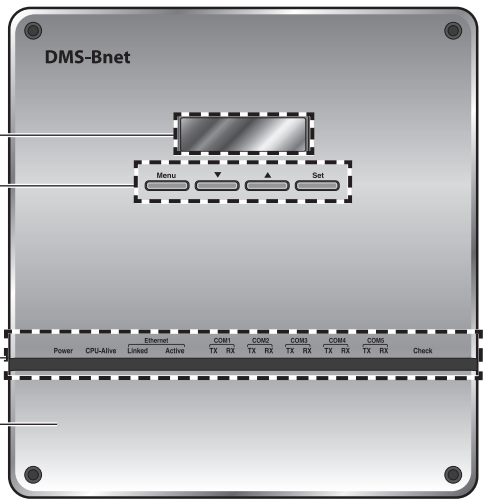
There are 4 buttons(Menu, ▼(Down), ▲(Up), Set) and you can access to menu and move, check the menu.

LED Indicator

Check 15 LED status such as Power, CPU-Alive, Ethernet-Linked/Active, COM1~5-TX/RX and Check

BACnet Gateway Bottom cover

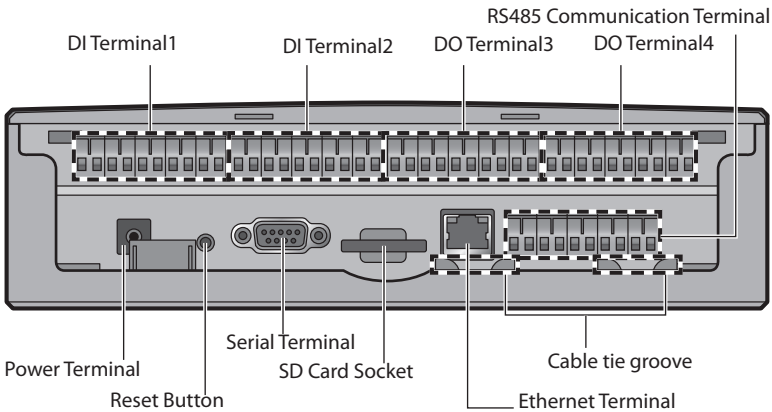
Unfasten 2 screws on the bottom and separate the bottom cover from BACnet Gateway. Then check cable connection part.



LED Indicator

Item	Name	Status
Power	Power indicator	Turns blue when the power is supplied.
CPU Alive	CPU operation indicator	Blinks in orange with 1 second intervals during normal operation.
Ethernet–Linked	Internet connection indicator	Turns green during normal connection.
Ethernet–Active	Internet data transmission/reception indicator	Blinks in orange during normal transmission/ reception.
COM1~5 – TX	Channel 1~5 Centralized controller/Interface module Data transmission Indicator	Blinks in green during normal transmission.
COM1~5 – RX	Channel 1~5 Centralized controller/Interface module Data reception Indicator	Blinks in green during normal reception,
Check	Indoor/Outdoor unit/Communication check Indicator	Turns green when notice occurs.

BACnet Gateway Cable Connection Part

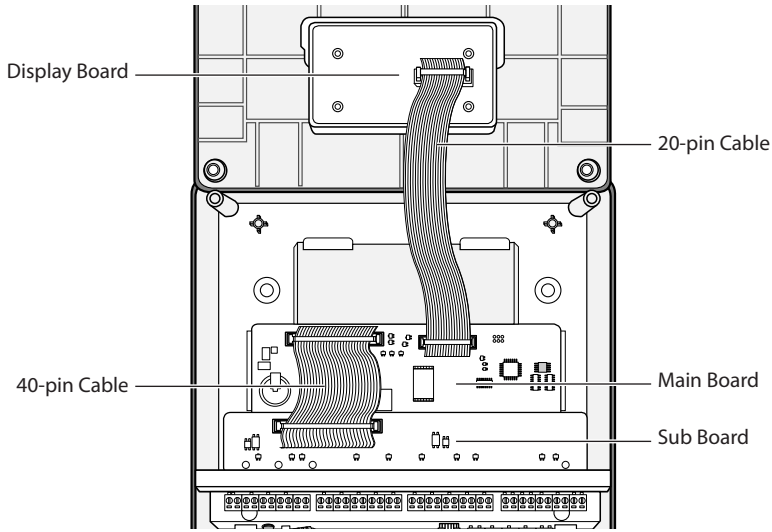


Name	Description
DI Terminal1	Digital Input connection terminal, Channel1~Channel5
DI Terminal2	Digital Input connection terminal, Channel6~Channel10
DO Terminal3	Digital Output connection terminal, Channel1~Channel5
DO Terminal4	Digital Output connection terminal, Channel6~Channel8
Reset Button	Reset BACnet Gateway
Power Terminal	Connect BACnet Gateway adapter
Serial Terminal	Service agent checks BACnet Gateway error status using this terminal
SD card socket	Sub memory (for program update and set information saving) socket
RS485 Communication Terminal	Connect for RS485 communication with devices such as centralized controller/Interface module -COM1 ~ COM5
Ethernet Terminal	Connect LAN cable
Cable tie groove	Groove for arranging cables

Viewing the Parts (Continued)

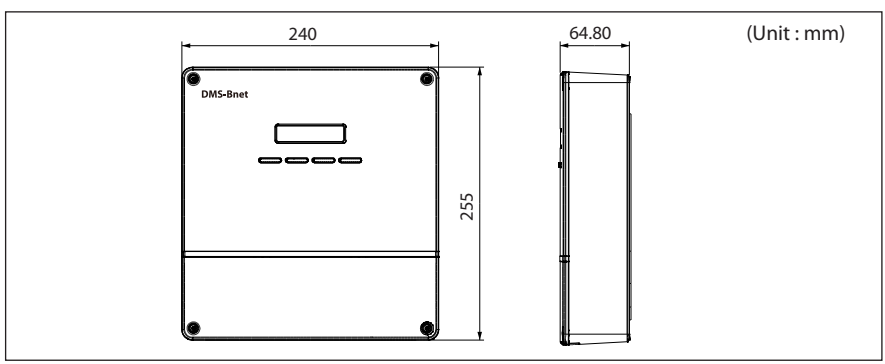
Main Parts

BACnet Gateway Interior

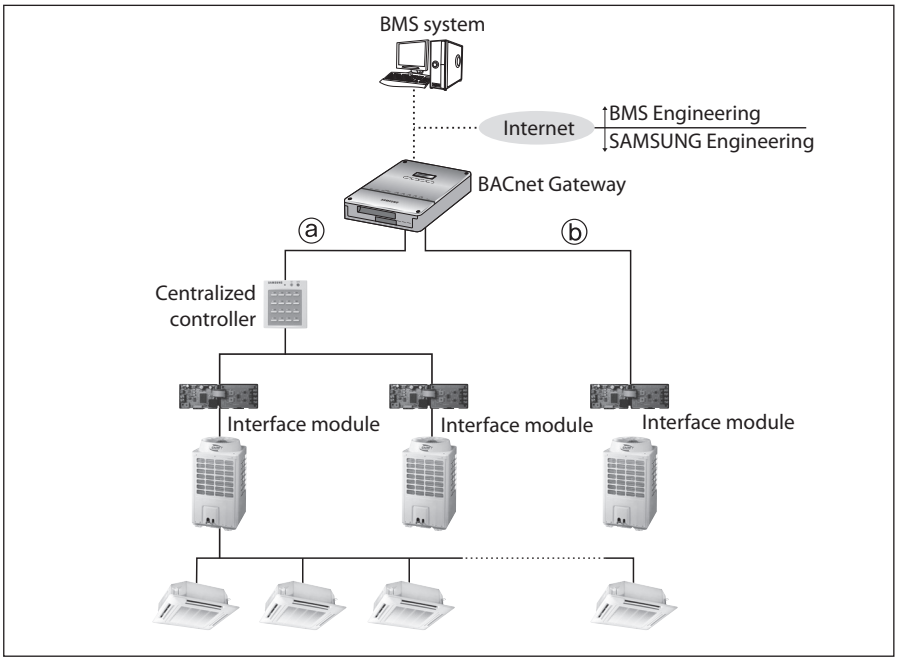


Note If you need external circuit configuration, consult with the manufacturer.

Product Dimensions



System Architecture



- Connecting centralized controller and BACnet Gateway (ⓐ type)
  - You can control up to 16 centralized controllers and 256 indoor units using BACnet Gateway.
- Connecting interface module and BACnet Gateway(ⓑ type)
  - You can control up to 80 interface modules and 256 indoor units using BACnet Gateway.
  *MAX.16 interface module can be connected to each of the RS485 communication channels of the BACnet Gateway.
  - The more interface modules are connected, the longer time takes for tracking.

CAUTION

- ***When connecting centralized controller and interface module to the BACnet Gateway of same communication channel, only one of them will communicate according to the communication channel mode setting of [System Settings]-[Tracking]. Therefore, do not connect the centralized controller and interface module to the same communication channel.***
- ***If you set the communication channel mode as interface module, virtual centralized controller address will be assigned. Therefore please aware of that if you set the centralized controller address as virtual centralized controller address when you connect interface module and centralized controller at the same, it may cause trouble for bringing device information.***

  Channel 0: Virtual centralized controller 11, Channel 1: Virtual centralized controller 12, Channel 2: Virtual centralized controller 13, Channel 4: Virtual centralized controller 14, Channel 5: Virtual centralized controller 15

Compatible Devices

No	Devices	Model	Note
1	Indoor Unit Outdoor Unit	All System indoor/outdoor units such as: DVM, DVM PLUS, DVM PLUS II, DVM PLUS III, DVM PLUS IV, mini DVM, CAC Series	-
2	Centralized Controller	MCM-A202, MCM-A202A, MCM-A202B, MCM-A202D	-
3	SIM	MIM-B12	Needed for EHP power distribution
4	PIM	MIM-B16	Needed for EHP power distribution
5	Interface module	MIM-B04A (DVM, DVM PLUS, etc.) MIM-B13 (DVM PLUS II¸ etc.) MIM-B13A (DVM PLUS II/ DVM PLUS III, DVM PLUS IVetc.) MIM-B13B, MIM-B13D, MIM-B13E	-
6*	Watt-hour Meter	RS485 comm. type	Connected with SIM Needed for power distribution (Please consult Samsung for compatible power meters)
		Pulse type	Connected with PIM Pulse Width : 20~400(ms) Pulse : 1~10000(Wh/Pulse)

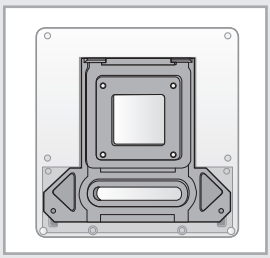
❉ Products with '* ' are not Samsung products and must be purchased separately.
(Only selected power meters may be used for protocol compatibility issues.)

❉ Samsung is not responsible for BMS engineering which creates each device and objects.
For further directions regarding on BMS engineering, consult with specialized BMS related vendor.

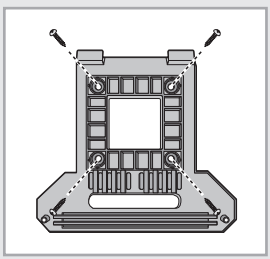
Maximum Devices Attachable

Devices	Max.	Note
Indoor Unit	256	Tracking error occurs if exceeded
Centralized Controller	16	Must not exceed 16 units
Interface module	80	16 units per 1 channel, total 80 units are connectable when connecting interface module to BACnet Gateway directly (256 units are connectable when using centralized controller)
SIM/PIM	8	Up to 8 units are connectable
Watt-hour Meter	64	8 units are connectable per 1 SIM/PIM

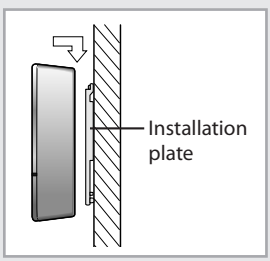
Installing the BACnet Gateway



1 Separate the installation plate on the rear side of BACnet Gateway.



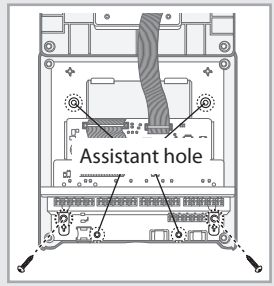
2 Fix the installation plate on the wall using 4 screws.



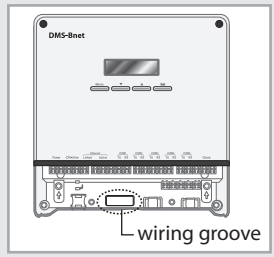
3 Hang the BACnet Gateway on the groove which is on the top of the installation plate.

4 Fix the installation plate and BACnet Gateway using 2 screws.

◆ Depending on the installation environment, fix BACnet Gateway using assistant holes.
(Screws for assistant hole are not provided by our company.)



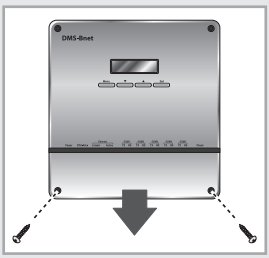
5 If you install BACnet Gateway inside of the wall or wiring from the rear side is needed, use wiring groove on the bottom of BACnet Gateway.



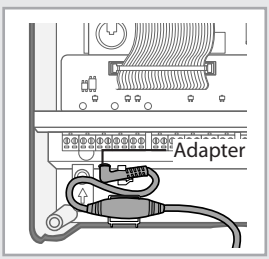
CAUTION

To prevent breakdown and damage of BACnet Gateway, and for safe usage, it is recommended to install BACnet Gateway on the wall.

Connecting Centralized Controller

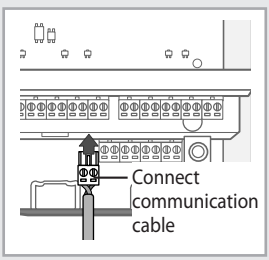


1 Unfasten the 2 screws on the bottom of the BACnet Gateway front cover. Hold the bottom 2 sides of the BACnet Gateway and push downwards to slide open the cover.

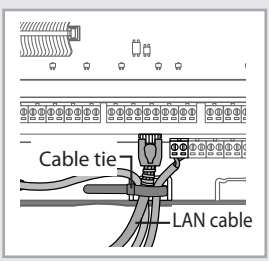


2 Connect the adapter to the power terminal.

◆ Arrange the adapter as the right figure.



3 Separate 1 terminal block from 5 terminal blocks which are attached to RS485 communication terminal.
Then, connect interface communication cable (C1, C2) to the terminal block.(C1↔A, C2↔B)



4 Connect LAN cable to the Ethernet terminal of BACnet Gateway. Then arrange it using cable tie.

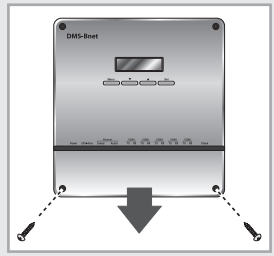
5 Fasten the bottom cover of BACnet Gateway and fix it using 2 screws.

CAUTION

Maximum 16 centralized controllers can be connected to one BACnet Gateway.

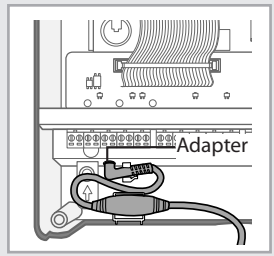
Connecting Interface Module

1 Unfasten the 2 screws on the bottom of the BACnet Gateway front cover. Hold the bottom 2 sides of the BACnet Gateway and push downwards to slide open the cover.

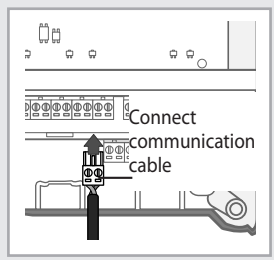


2 Connect the adapter to the power terminal.

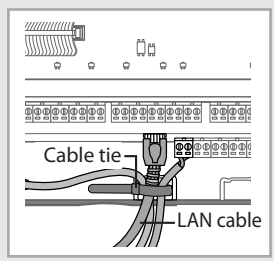
◆ Arrange the adapter as the right figure.



3 Separate 1 terminal block from 5 terminal blocks which are attached to RS485 communication terminal.
Then, connect interface module communication cable(R1, R2) to the terminal block.(R1↔A, R2↔B)



4 Connect LAN cable to the Ethernet terminal of BACnet Gateway. Then arrange it using cable tie.

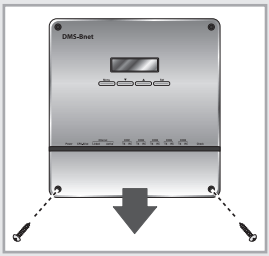


5 Fasten the bottom cover of BACnet Gateway and fix it using 2 screws.

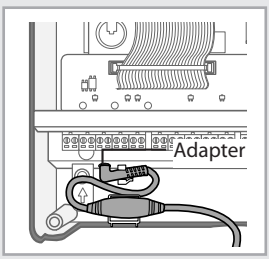
CAUTION

Maximum 80 interface modules can be connected to one BACnet Gateway.

Connecting SIM/PIM

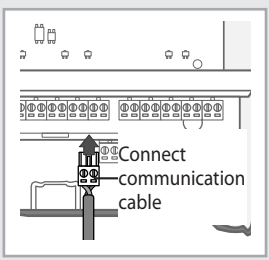


1 Unfasten the 2 screws on the bottom of the BACnet Gateway front cover. Hold the bottom 2 sides of the BACnet Gateway and push downwards to slide open the cover.

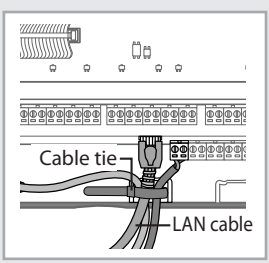


2 Connect the adapter to the power terminal.

◆ Arrange the adapter as the right figure.



3 Separate 1 terminal block from 5 terminal blocks which are attached to RS485 communication terminal.
Then, connect SIM/PIM communication cable (C1, C2) to the terminal block. (C1↔A, C2↔B)



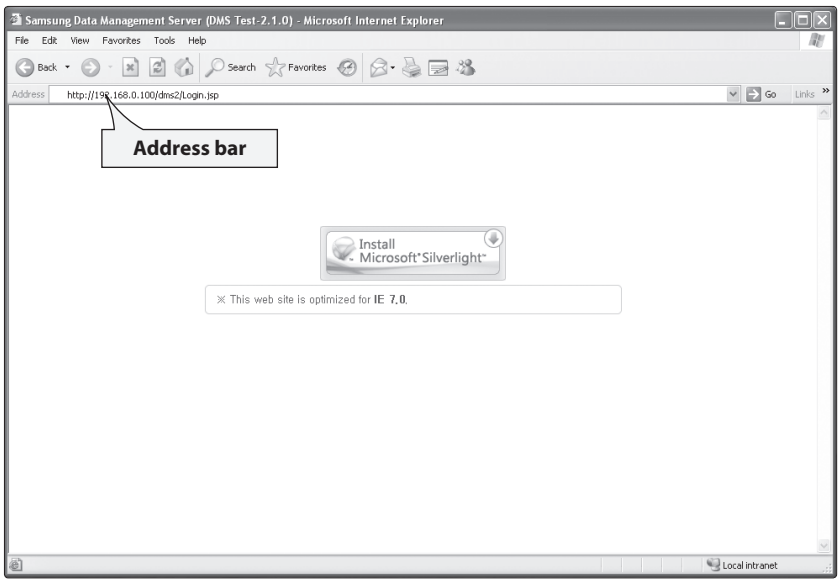
4 Connect LAN cable to the Ethernet terminal of BACnet Gateway. Then arrange it using cable tie.

5 Fasten the bottom cover of BACnet Gateway and fix it using 2 screws.

CAUTION

Maximum 8 SIM/PIM units can be connected to one BACnet Gateway.

BACnet Gateway Connection and Login

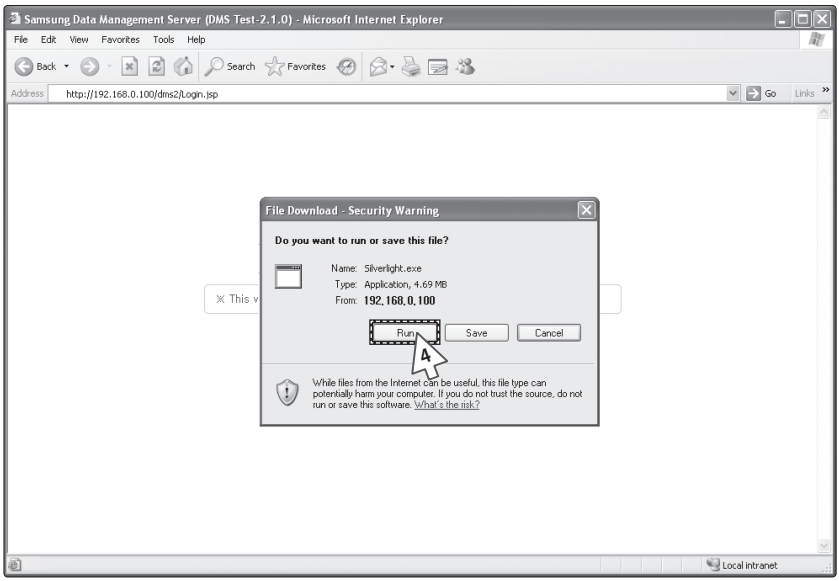

Samsung Data Management Server (DMS Test-2.1.0) - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
Address http://192.168.0.100/dms2/Login.jsp
Go Links
Address bar
Install Microsoft Silverlight
※ This web site is optimized for IE 7.0.
Local intranet

1 Click internet explorer icon( ) twice on your computer.

2 When internet explorer window appears, enter IP address **(http://192.168.0.100)** on the address bar then press [ENTER].

3 If it is the first time to access BACnet Gateway, "Install Microsoft Silverlight" message will appear.

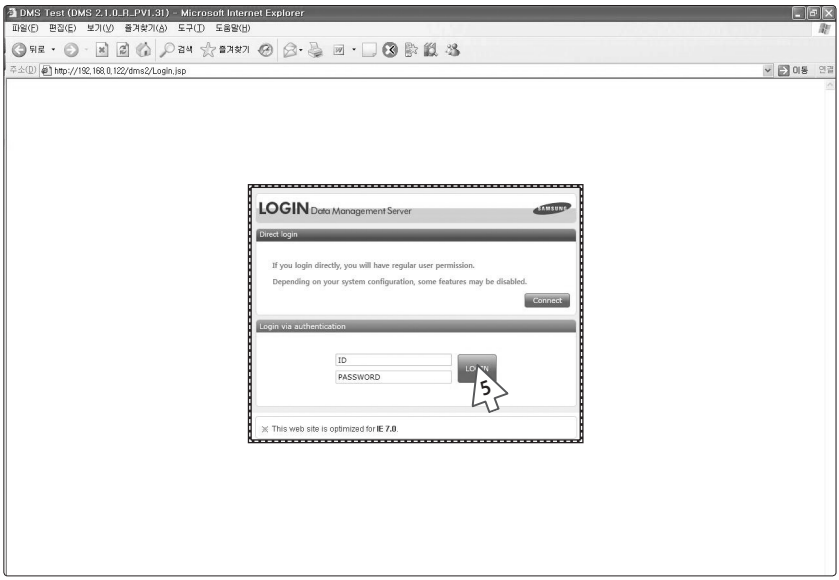
◆ If Microsoft Silverlight have already installed, the screen will not appear.


Samsung Data Management Server (DMS Test-2.1.0) - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
Address http://192.168.0.100/dms2/Login.jsp
Go Links
File Download - Security Warning
Do you want to run or save this file?
Name: Silverlight.exe
Type: Application, 4.69 MB
From: 192.168.0.100
Run
Save
Cancel
While files from the Internet can be useful, this file type can potentially harm your computer. If you do not trust the source, do not run or save this software. What's the risk?
Local intranet

4 Click [Run] button and continue installation.
After installation, access to BACnet Gateway again.

CAUTION

Silverlight operates normally with Windows XP SP2 or later version. It may not operate normally with previous version of Windows.



5 Enter ID and password when BACnet Gateway main web page appears, Then click [LOGIN]. If you click [Connect], you will be logged in with general user's authority level.

- ◆ If you use accounts with general authorization level to login, you cannot use the BACnet Gateway settings.
- ◆ Depending on authorization level set by the administrator, access to some functions may be restricted.
- ◆ You can change authorization level settings from **System settings ➔ User authorization management**.
- ◆ To use the BACnet Gateway functions, you must login with the ID that is included in administration group. Factory default BACnet Gateway ID is 'admin' and password is '1234'.

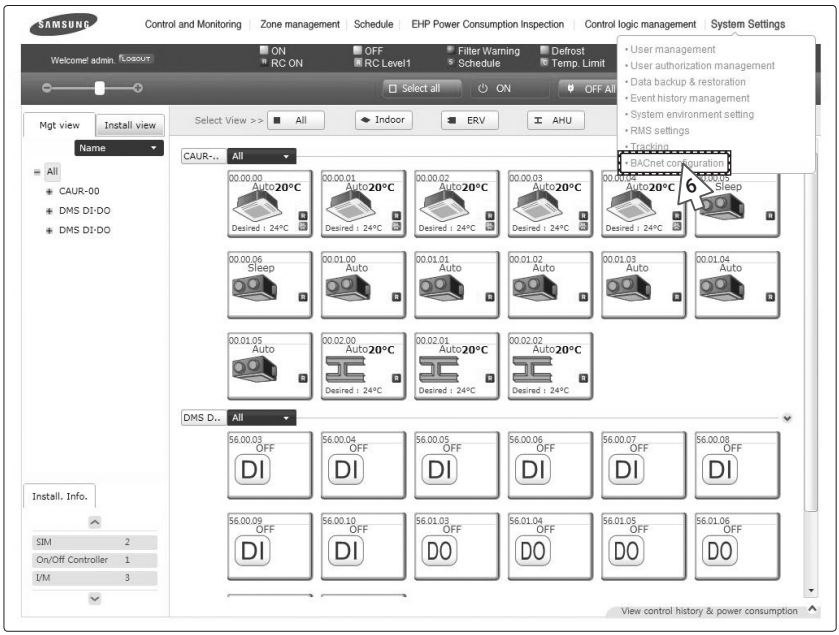
Note

- ◆ ***Only authorized users can access to web page.***
- ◆ ***Connection speed may slow down. Fewer than 5 concurrent users are recommended.***
- ◆ ***BACnet Gateway manager should change ID and password for security and management.***
- ◆ ***Logout: If you want to logout, click [LOGOUT] on the top of the menu. BACnet Gateway will be ended.***

CAUTION

- ◆ ***If you use accounts with authorization level lower than management group or accounts with general authorization level, you cannot access BACnet Gateway settings.***
- ◆ ***If you cannot access BACnet Gateway, consult the manager.***

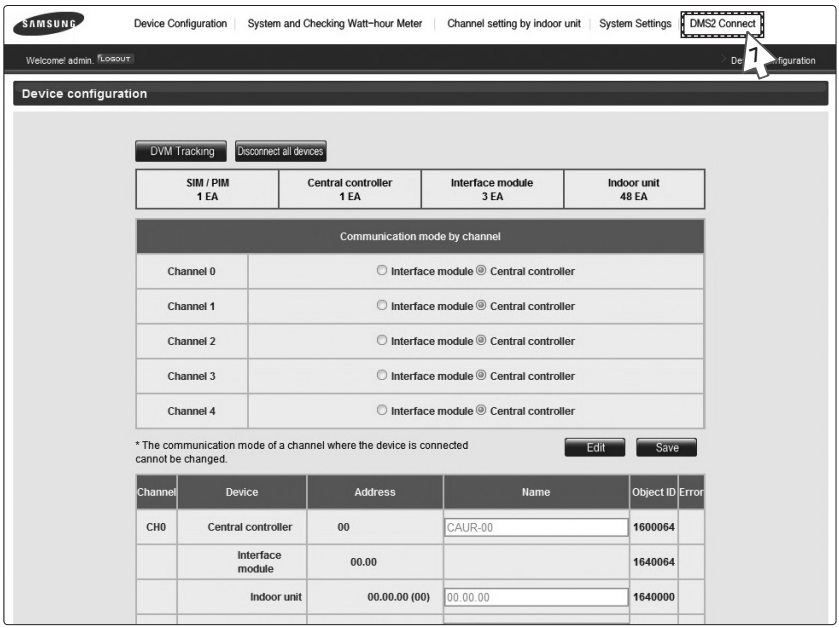
Setting the BACnet Gateway (Continued)



6 If you login successfully, 'Control and Monitoring' screen will appear.
Click [System Setting]➔[BACnet configuration] menu to switch to BACnet Gateway.

CAUTION

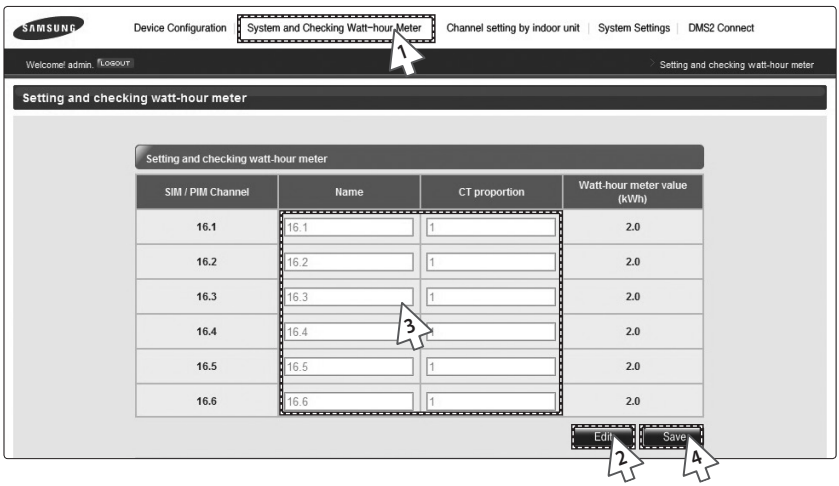
- ***If you use accounts with authorization level lower than management group or accounts with general authorization level, BACnet configuration will not be displayed on the menu.***
- ***If the BACnet configuration menu does not appear, consult the manager.***



7 If you access BACnet Gateway, 'Device Configuration' screen will appear initially.

◆ If you click [DMS2 Connect] button, screen will be switched to initial screen.

Setting and checking watt-hour meter



1 Click [System and Checking Watt-hour meter].

◆ You can change settings on watt-hour meter only when SIM/PIM interface module is connected.

2 Click [Edit] from the 'Setting and checking Watt-hour meter' screen.

◆ CT proportion is set to '1' as factory default value.

3 Set the [Name] and [CT proportion] for the watt-hour meter.

◆ You can use maximum 16 letters for name and only available special characters are ".", ",", "_", "-", and "space".

◆ Value for CT proportion should be integer between range of 1 ~ 5000.

4 Click [Save].

◆ CT proportion value will be saved to the BACnet Gateway.

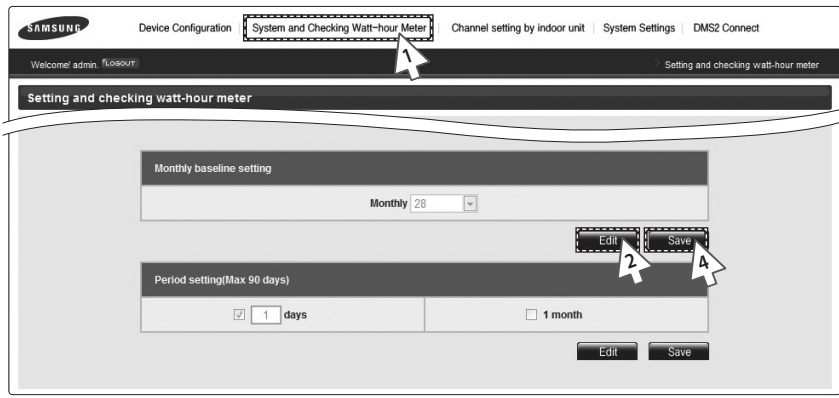
◆ If you do not click [Save] changed setting will not be saved.

5 Watt-hour meter value will display the actual value of electricity on the corresponding watt-hour meter. Value will be updated automatically.

CAUTION

When using CT watt-hour meter, be careful that there can be difference with actual power consumption as much as CT ratio error.

Monthly baseline setting



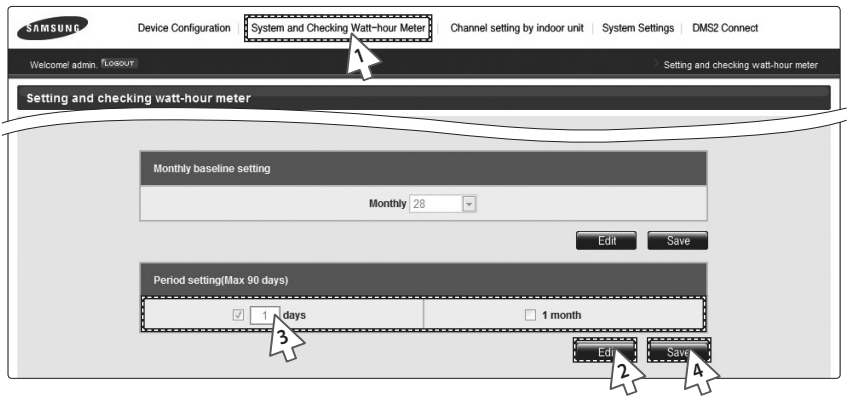
1 Click [System and Checking Watt-hour meter].

2 Click [Edit] from the 'Monthly baseline setting' screen.
- ◆ You can make changes when list box enables.

3 Set the Monthly baseline setting.
- ◆ You can select from 1~31.
- ◆ If you select the last day of the month, it will automatically set the last day of corresponding month as baseline.
  Ex) Last day of February: 28th or 29th

4 Click [Save].
- ◆ Changed settings will be saved to the BACnet Gateway.
- ◆ If you do not click [Save] changed setting will not be saved.

Period setting



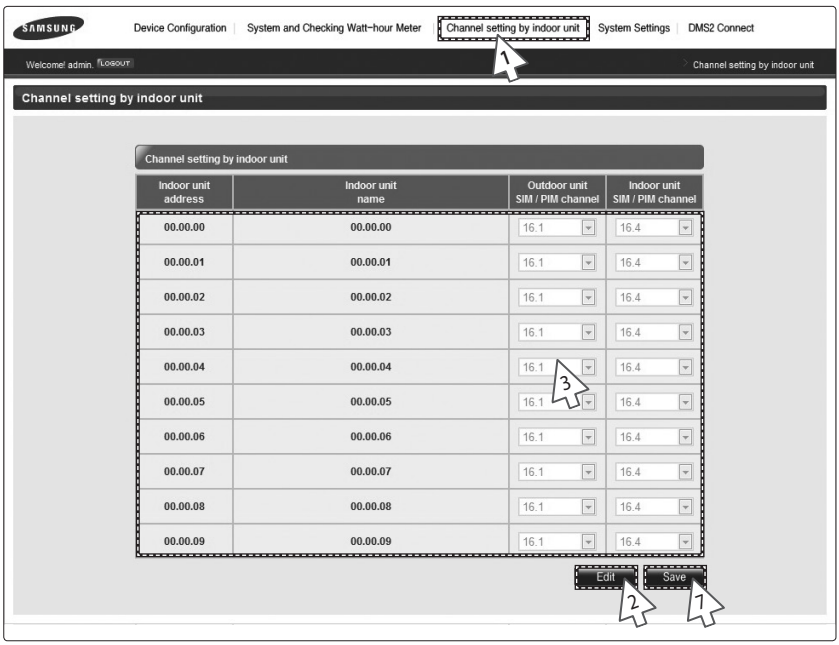
1 Click [System and Checking Watt-hour meter].

2 Click [Edit] from the 'Period setting' screen.
- ◆ You can select checkbox to set period in daily or monthly unit.
- ◆ If you select daily period setting, text box will be enabled and you can enter the period in daily unit.
- ◆ If you select monthly period setting, you can select the period in monthly unit.

3 Set the period
- ◆ If you set period in daily unit, you can set up to maximum 90 days.
- ◆ If you set period in monthly unit, you can set up to maximum 1 months.

4 Click [Save].
- ◆ Changed setting will be saved to BACnet Gateway.
- ◆ If you do not click [Save], changed setting will not be saved.

Channel setting by indoor unit



1 Click [Channel setting by indoor unit].

2 Click [Edit] from the 'Channel setting by indoor unit' screen.

3 Check the address and the channel information of the SIM/PIM interface module which is connected to the watt-hour meter.

◆ If the SIM interface modules with addresses 0 ~ 7 executes tracking, it will be displayed as 16~23 in BACnet Gateway.

4 Check the information of indoor/outdoor unit which is connected to watt-hour meter.

5 Check the SIM/PIM interface module channel (Watt-hour meter) information of indoor/outdoor unit.
- ◆ You can set the channel when SIM/PIM interface module is installed in BACnet Gateway.
- ◆ When the indoor unit's power is supplied from outdoor unit, set the 'Outdoor unit SIM/PIM channel' information only. ('Outdoor unit SIM/PIM channel' is referring to watt-hour meter which is connected to outdoor unit.)
- ◆ When the indoor unit's power is supplied from source other than outdoor unit, set the 'Outdoor unit SIM/PIM channel' and 'Indoor unit SIM/PIM channel' information. ('Indoor unit SIM/PIM channel' is referring to watt-hour meter which is connected to indoor unit.)
- ◆ Power distribution will be executed automatically. User does not need to check the value of watt-hour meter.

6 Set indoor unit to execute power distribution.
- ◆ If you do not set the watt-hour meter information, the power distribution result of the indoor unit will be displayed as '0'.

7 Click [Save].
- ◆ Changed setting will be saved to BACnet Gateway.
- ◆ If you do not click [Save] changed setting will not be saved.

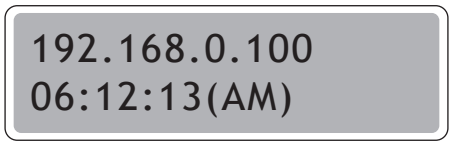
⚠ CAUTION

- ◆ ***Information of watt-hour meter connected to indoor/outdoor unit should be accurate. If the watt-hour meter information is not accurate upon setting the channel information of indoor unit, error may occur in the power distribution result.***
- ◆ ***You must set SIM/PIM channel information in the indoor unit if you want to execute power distribution. If not, it means that you do not execute power distribution and the power distribution result of the indoor unit will be '0'.***
- ◆ ***If the information of watt-hour meter connected to indoor/outdoor unit is changed, consult with installation enginner.***
- ◆ ***BACnet Gateway executes power distribution based on set information.***

System Setting Initialization

1 Press [Menu], [▲], [▼] or [Set] from the screen where IP and current time is displayed.

- ◆ Main menu screen appears.
- ◆ Initialization is not possible in the screen where time information is displayed.

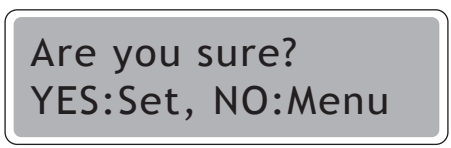


2 Press [Menu] ➔ [▼] ➔ [▲] ➔ [▼] ➔ [Menu] buttons in order from the main menu screen.

- ◆ Caution will be displayed on LCD Display.

3 Initialize BACnet Gateway by clicking [Set] when caution phrase appears.

- ◆ If you press [Menu] button, system will return to main menu without initialization.



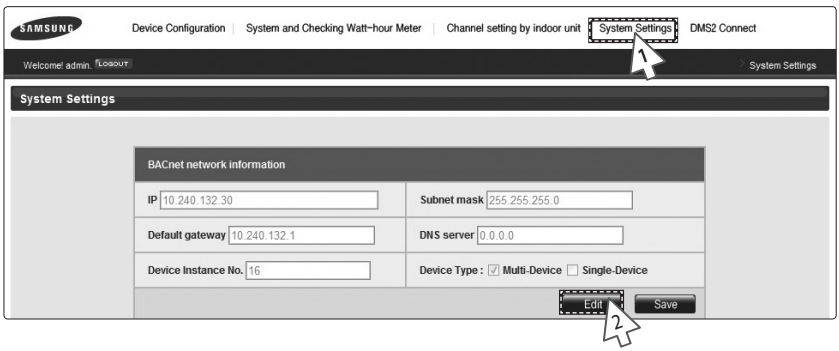
CAUTION

When initializing system setting, all saved data in BACnet Gateway will be deleted. After initialization, you must aware that the saved data and IP address will be reset to default factory setting.

System Settings

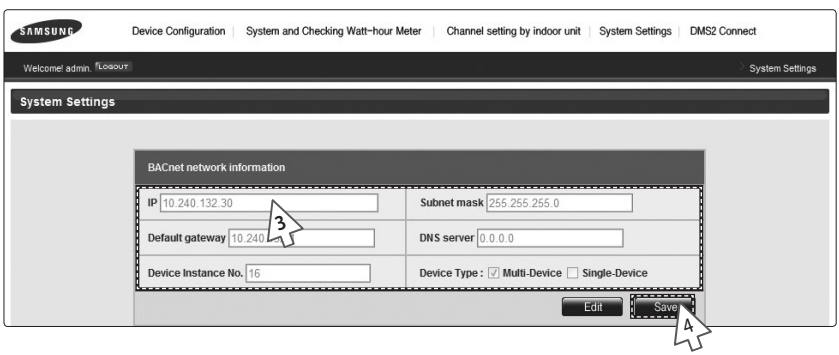
◆ You can set and check information about BACnet Gateway installation and operation.

BACnet Gateway network information



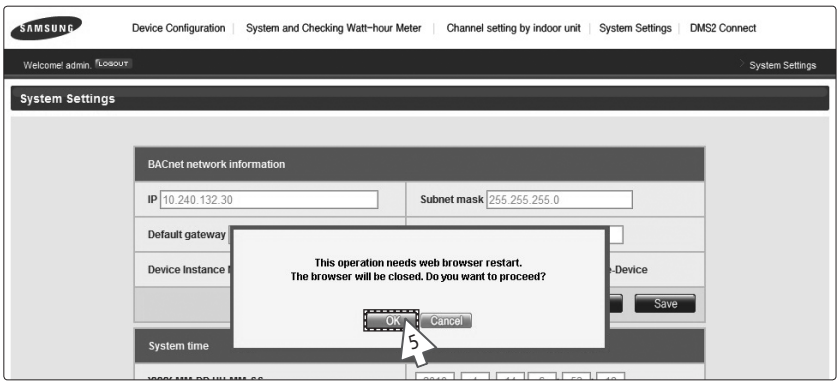
1 Click [System Settings].

2 Click [Edit] from the 'BACnet network information' section.



3 When text boxes of IP, Subnet mask, Default gateway, Device Instance No. and DNS server are enabled. Enter values for each item.
- ◆ 15 letters can be entered for each item.
- ◆ Each item should match with the network address form.
- ◆ You can enter from 1 to 16 for Device Instance No.

4 Click [Save] button on the 'BACnet network information' section.



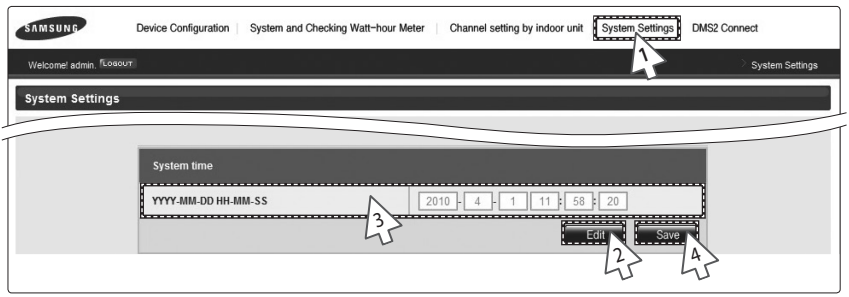
5 When the pop-up window appears, click [OK].

6 If you click [OK], current internet explorer will be closed. Then you may run the web browser again and access to BACnet Gateway by entering the IP set and saved manually.

Note

- ◆ ***Factory setting is as follows.***
  1. IP address: 192.168.0.100
  2. Subnet mask: 255.255.255.0
  3. Default gateway: 192.168.0.1
  4. DNS server: 0.0.0.0
- ◆ ***Since BACnet Gateway sets 192.168.0.254 as engineering IP internally, it should be always available regardless of current IP.***
- ◆ ***If several BACnet Gateways are connected to single website, there can be IP crash because same service engineer IP(192.168.0.254)is applied to each BACnet. In this case, edit the service engineer IP by following below instructions and then use the IP.***
  1. Run DOS command window by entering "cmd" from Windows "Start → Run".
  2. Access to BACnet Gateway by running "telnet 192.168.0.254"from DOS command window.
  3. Enter ID/PASSWORD.
  4. Edit "sysenv" file (IP setting related file) as below.
  - Run "sudo vi /mnt/nand0/config/sysenv" from telnet connection screen.
  - Find"IP2=192.168.0.254"and edit the IP as you want.
  ❉ Basic commands
  'i'- Modification is possible after entering
  'x'- Delete
  Esc + ":wq" – End after saving.
  - Restart
  5. After editing you may access BACnet Gateway with changed IP.
  ❉ There can be IP (192.168.0.254) crash if you execute above procedure when several DMS units are connected. To check accurate operation, change the service IP after installing each BACnet Gateway.

System time

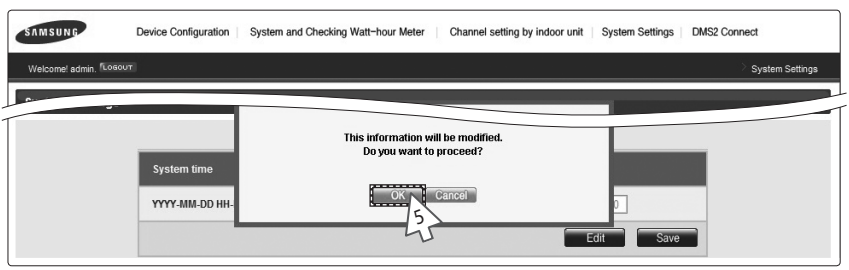


1 Click [System Settings].

2 Click [Edit] from the 'System time' section.

3 Enter system time when text boxes enables.
- ◆ You can only enter numbers.
- ◆ Year: You can enter from 1980 to 2035.
- ◆ Month: You can enter from 1 to 12.
- ◆ Day: You can enter from 1 to 31.
- ◆ Hour: You can enter from 0 to 23.
- ◆ Minute: You can enter from 0 to 59.
- ◆ Second: You can enter from 0 to 59.

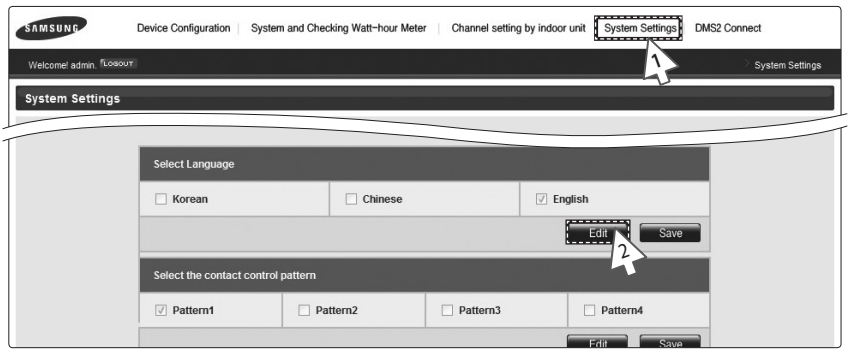
4 Click [Save] button on the 'System time' section.



5 When the pop-up window appears, click [OK].
- ◆ When message with "Reading data from DMS. Please wait" appears saving is completed. Then, 'System Settings' screen appears again with all items disabled.

Note ***System time reflects set current value.***

Selecting the language



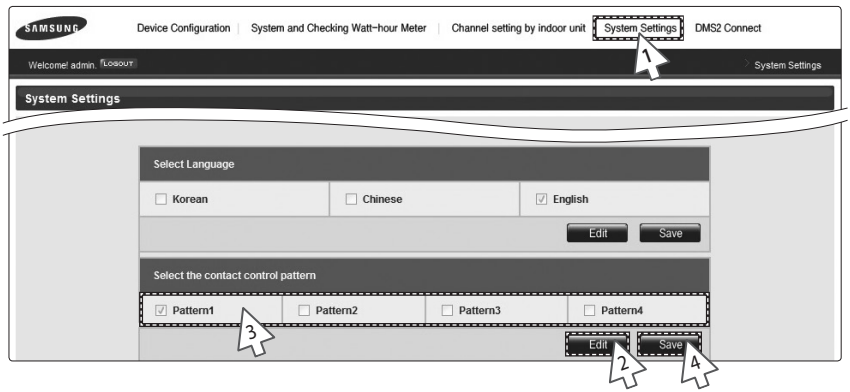
1 Click [System Settings].

2 Click [Edit] from the 'Select language' section.

3 Select a language you want and click [Save].

4 When the pop-up window appears, click [OK]. BACnet Gateway will restart and the system will be changed to selected language.

Selecting the contact point control pattern

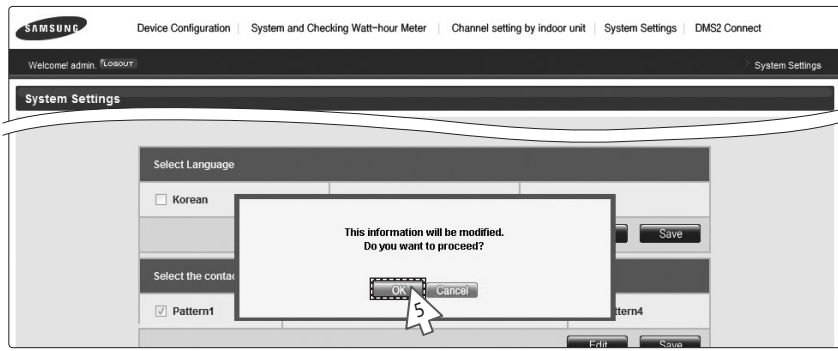


1 Click [System Settings].

2 Click [Edit] from the 'Select the contact point control pattern' section.

3 Select the pattern you want to check when checkboxes enables.
- ◆ Pattern 1: No operation will be made when inputting contact control signal.
- ◆ Pattern 2[Level (Emergency stop)]: Commands to stop all operation of indoor unit (except DDC) and disable remote control when inputting contact control signal. In level emergency stop status, it will not be controllable even if the command is from upper controller.
- ◆ Pattern 3[Level (Operation/Stop)]: Level signal input timing. It changes operation/stop status of all indoor units.
- ◆ Pattern 4[Pulse (Operation/Stop, Disable/Enable)]: Pulse signal. It changes operation/stop status of all indoor units.

4 When pattern is selected, click [Save].



5 When the pop-up window appears, click [OK].

◆ When message with "Reading data from DMS. Please wait" appears saving is completed. Then, 'System Settings' screen appears again with all items disabled.

Note ***Contact point control pattern is set to pattern 1 as factory default.***

CAUTION

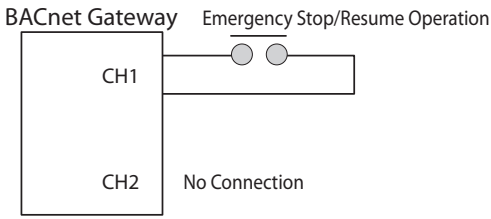
For extension purpose, BACnet Gateway has total of 10 DI/DO ports. Contact control and output function is assigned to Ch1 and Ch2. Ch3~Ch10 will be assigned to additional functions. For proper contact control, connect with Ch1 and Ch2.

Contact point control pattern

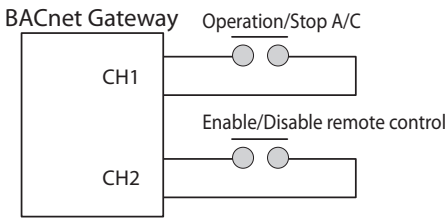
Pattern	Control
Pattern1	▶ No external input (Factory default setting) When you input contact control signal in port 1, there will be no response.
Pattern2	▶ Level input (Emergency stop) 1. If the contact control signal is changed to ON, emergency stop status and all the indoor units are given 'Stop' command, and controlling using remote controller is impossible. 2. During the emergency stop, the BACnet Gateway will ignore any request from the upper controllers. 3. During the emergency stop, the BACnet Gateway will ignore previously set schedules. 4. When the contact control signal changes from ON to OFF, DVM goes into normal operation status and returns to the remote control status before emergency stop. 5. Even if the contact control signal of port 1 changes from ON to OFF, there will be no change to the indoor unit. 6. When you input contact control signal in port 2, there will be no response.
Pattern3	▶ Level input (Operation/Stop, Remote control Enable/Disable) 1. If the contact signal of port 1 changes from OFF to ON, all indoor units will be given 'Operation' command. 2. If the contact signal of port 1 changes from ON to OFF, all indoor units will be given 'Stop' command. 3. If the contact signal of port 2 is OFF, you cannot control all indoor units using remote controller. 4. If the contact signal of port 2 changes from OFF to ON, you can control all indoor units using remote controller. 5. If the contact signal of port 2 changes from ON to OFF, you cannot control all indoor units using remote controller. 6. Control command from the upper controller will be operated regardless of the contact point status. 7. DVM system control using Schedule control will be operated regardless of the contact point status.
Pattern4	▶ Pulse input (Operation/Stop) 1. Valid pulse duration for input signal is 0.5~1.0 second. BACnet Gateway ignores the signal which has shorter than 0.5 second duration, longer than 1.0 second Pulse width. 2. When Pulse input signal is ON in Port 1. all indoor units will be given 'Operation' command. 3. When Pulse input signal is ON in Port 2. all indoor units will be given 'Stop' command. 4. DVM control command from the upper controller will be operated regardless of Pulse input signal. 5. DVM system control using Schedule control will be operated regardless of Pulse input signal.

DI(Digital Input) Circuitry according to Control Switch Pattern

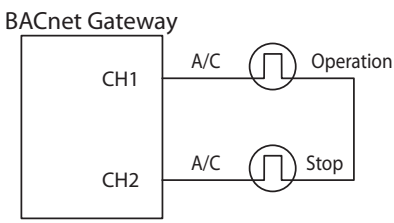
- Pattern 2 (May be used for connection with a fire sensor)



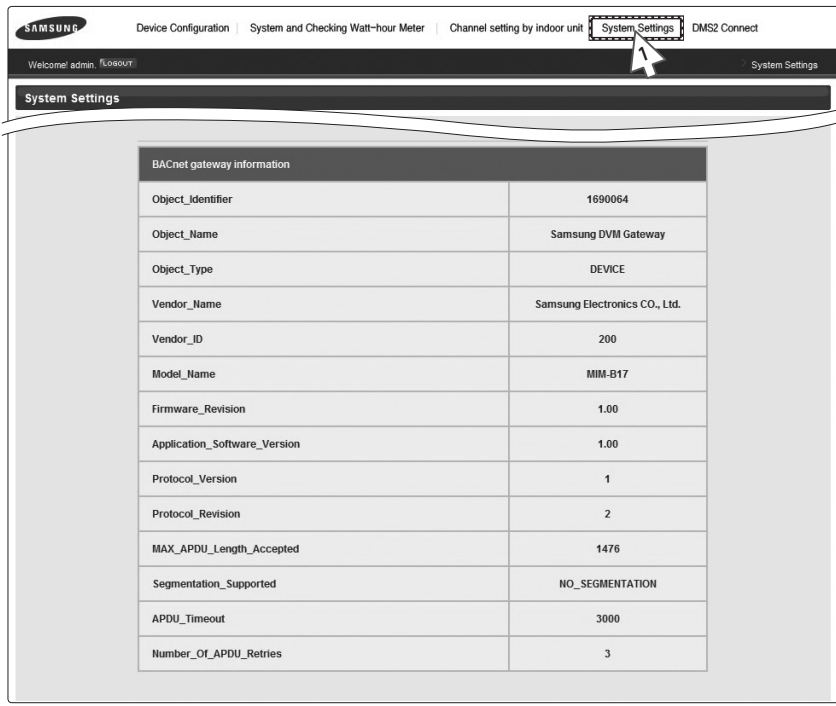
- Pattern 3 (External contact signal control)



- Pattern 4 (Pulse signal control)



BACnet gateway information



BACnet gateway information	
Object_Identifier	1690064
Object_Name	Samsung DVM Gateway
Object_Type	DEVICE
Vendor_Name	Samsung Electronics CO., Ltd.
Vendor_ID	200
Model_Name	MIM-B17
Firmware_Revision	1.00
Application_Software_Version	1.00
Protocol_Version	1
Protocol_Revision	2
MAX_APDU_Length_Accepted	1476
Segmentation_Supported	NO_SEGMENTATION
APDU_Timeout	3000
Number_Of_APDU_Retries	3

1 Click [System Settings].

2 You can check the basic BACnet gateway information from 'BACnet gateway information' section.

Tracking

◆ **What is tracking?**

Tracking is an operation that finds devices connected to BACnet Gateway.
Through tracking operation, devices will be recognize if they are connected to BACnet Gateway.
To supervise and control system air conditioner using BACnet Gateway, tracking should be done first.

◆ **Things you can do through tracking**

Checking the number of devices installed, setting communication mode for each channel, DVM tracking, Renaming and setting ports is possible through tracking.

◆ **Execute tracking**

(1) Connect DVM device to COM1~COM5.
(2) Set communication mode for each channel.
- Set proper communication mode which fits to the devices connected in step (1).
- Be aware that if communication mode is not properly set, the device may not be found through tracking.

(3) Execute tracking - Execute DVM tracking.
- DVM tracking is an operation that finds system air conditioner devices such as indoor/outdoor unit and watt-hour meter.

(4) Setting name for each device.
- You can set name for connected device. Set the names to help you recognize the location of the device easily.

◆ **Communication mode setting for each channel**

Roles
- It records what devices are connected to COM1~ COM5 of BACnet Gateway.
- Through tracking, BACnet Gateway searches proper devices that fits to user's setting.
- Select proper communication mode which fits to connected device.

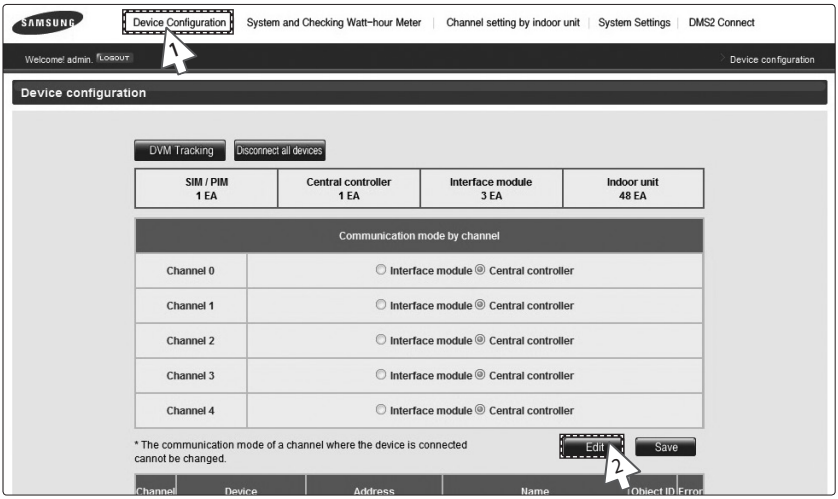
What is communication mode?
- Interface module, centralized controller, SIM interface modules and Watt-hour meter interface modules can be connected to BACnet Gateway.
- BACnet Gateway can use only the device assigned for each COM port.
- Communicational devices by communication mode is as follows.

▶ Interface module : Interface module, SIM interface modules, Watt-hour interface modules.
▶ Centralized controller mode : Centralized controller, SIM interface modules, Watt-hour interface modules.

⚠ CAUTION

BACnet gateway will automatically assign the instance number of a device or object according to the tracking result.
When the indoor unit address is changed by tracking, check the device information again in the man machine interface (MMI) since the instance number can also be changed.

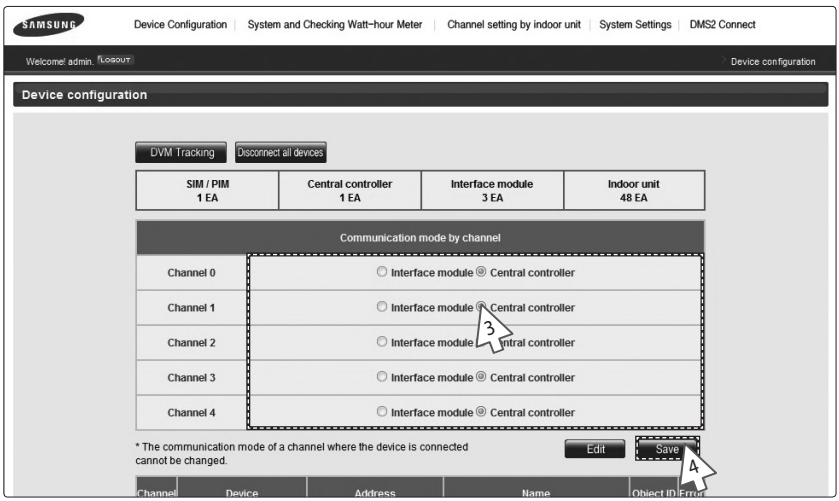
Setting communication mode for each channel



1 Click [Device Configuration].

2 Click [Edit] from the 'Communication mode by channel' screen.

- ◆ [Edit] button will be switched to [Cancel].
- ◆ All selection buttons will be enabled. However, the channels with searched device maintain its button in disabled status.



3 When each channel is enabled, check the communication mode you want to set for each channel.

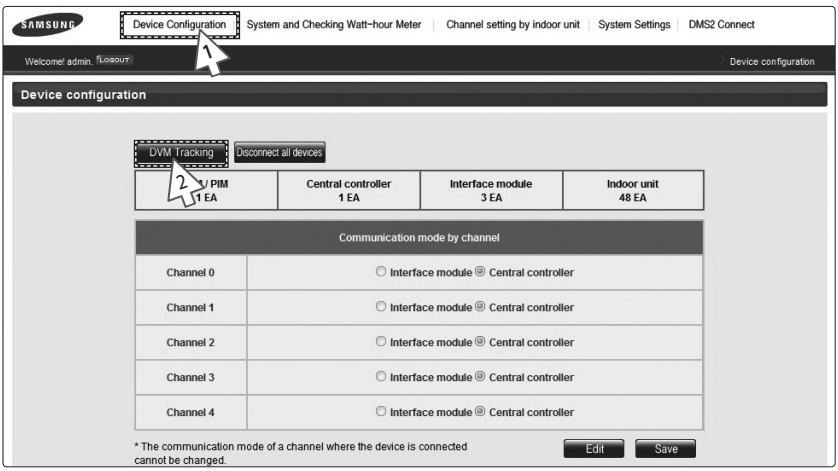
- ◆ You cannot change the communication mode of channel which has currently connected device.
- ◆ If you set interface module as communication mode, tracking/monitoring/ controlling interface module and SIM interface module is possible.
- ◆ If you set interface module as communication mode, tracking/monitoring/ controlling centralized controller and SIM interface module is possible.

4 Click [Save] after setting is completed.

- ◆ If you click [Cancel], check boxes will be disabled and [Cancel] button will switch to [Edit].

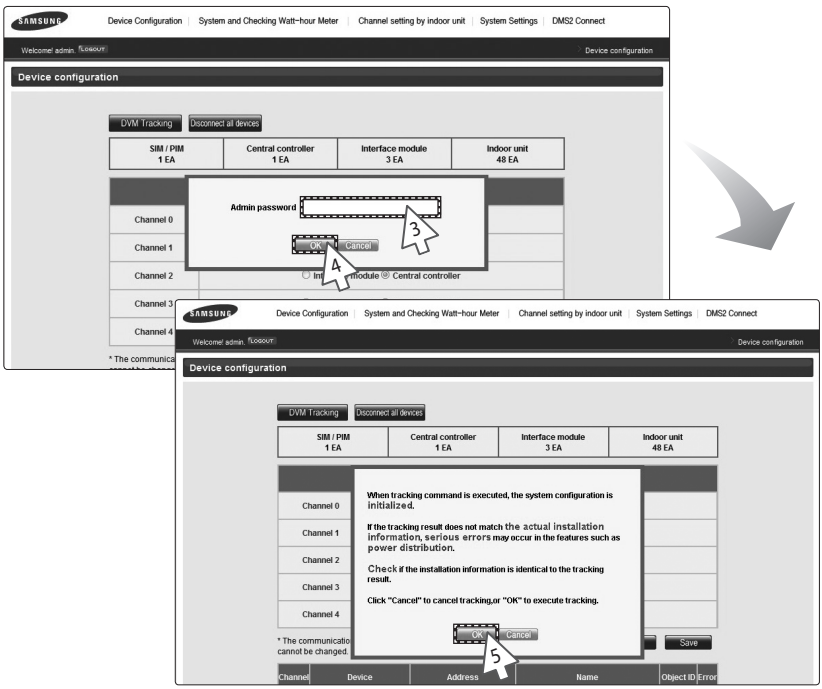
5 When message with "Reading data from DMS. Please wait" appears saving is completed. Then, 'System Environment Setting' screen appears again with all items disabled.

DVM Tracking



1 Click [Device Configuration].

2 Click [DVM Tracking].


Device Configuration
System and Checking Watt-hour Meter
Channel setting by indoor unit
System Settings
DMS2 Connect
Device configuration
DVM Tracking
Disconnect all devices
SIM / PIM 1 EA
Central controller 1 EA
Interface module 3 EA
Indoor unit 48 EA
Admin password
OK
Cancel
3
4
When tracking command is executed, the system configuration is initialized.
If the tracking result does not match the actual installation information, serious errors may occur in the features such as power distribution.
Check if the installation information is identical to the tracking result.
Click "Cancel" to cancel tracking,or "OK" to execute tracking.
Save
5

3 Enter administrator's password.

4 Click [OK].

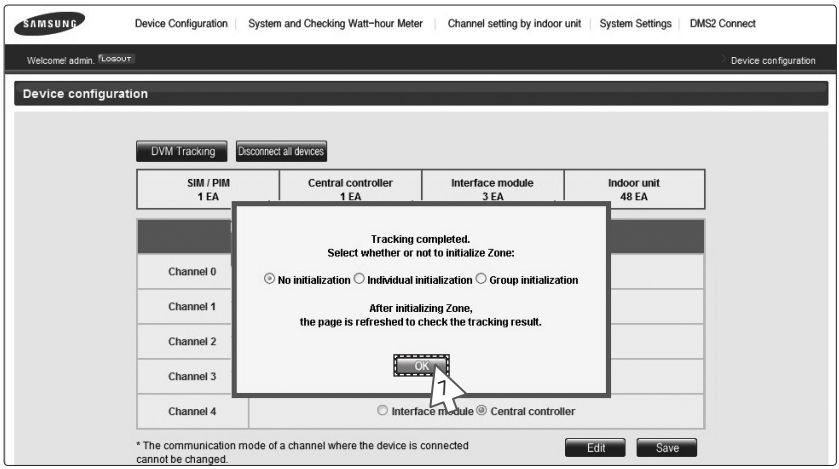
5 When tracking information window pops up, check it and click [OK] to continue.

- ◆ Tracking will be executed regarding on the communication mode set from 'Communication mode by channel' section.
  - ▶ Channels with communication mode set to Interface module, tracking will be executed on the interface modules within range of D0~DF and SIM interface modules.
  - ▶ Channels with communication mode set to Centralized controller, tracking will be executed on centralized controller and SIM interface module.

6 Pop-up window with message "Tracking is in progress. Please wait." will appear.

- ◆ Tracking takes from few seconds to 3 minutes. However, it may vary depending on the number of installed controllers.

Tracking (Continued)



7 Message will appear to alert that tracking is completed. Select the zone initializing mode and click [OK].

- ◆ No initialization: No zone information initialization will be made.
- ◆ Individual initialization: Initialize zone information as individual mode.
- ◆ Group initialization: Initialize zone information as group mode.

8 Page will be refreshed by clicking [OK]. Then you can check the tracking result.

Note

- ◆ ***If tracking is executed successfully with interface module set for communication mode setting for each channel, virtual centralized controller will be assigned to each channel.***
- ◆ ***For the address of the virtual centralized controller, Channel 0 will be set to 11, Channel 1 to 12, Channel 2 to 13, channel 3 to 14 and channel 4 to 15.***
- ◆ ***If there is existing communication channel for interface module, tracking for centralized controller will be limited to range of 0 ~ 10.***
- ◆ ***If you cannot find any devices after tracking, it will be considered as a DVM tracking failure***
- ◆ ***If there are devices which have same address, only first searched device will be registered.***
- ◆ ***The number of centralized controller contains the number of virtual centralized controller which is used in interface module communication.***
- ◆ ***The number of indoor unit contains the number of indoor unit, ERV and AHU kit.***

CAUTION

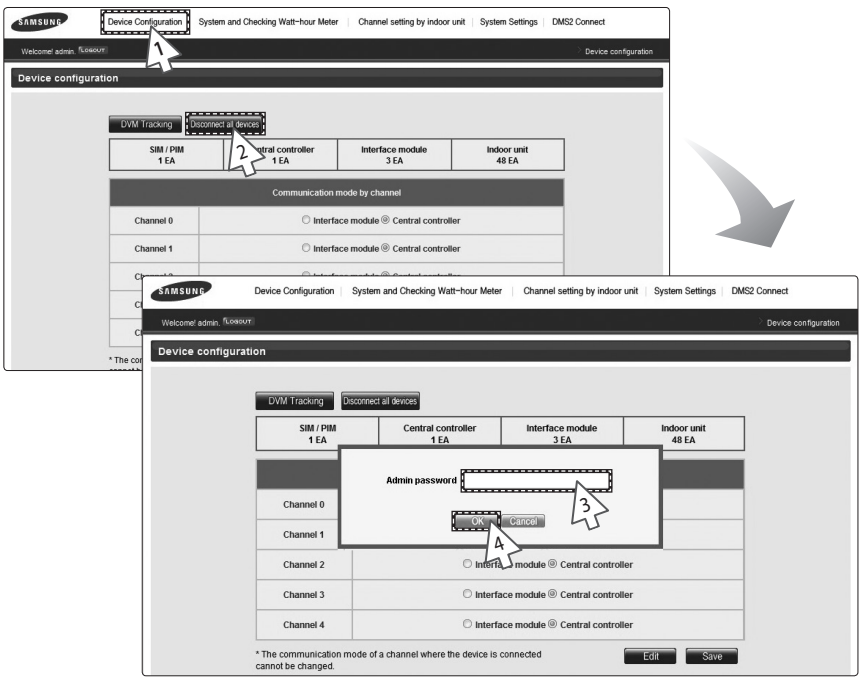
- ◆ ***If you execute tracking, system setting will be initialized.***
- ◆ ***If tracking result does not match with actual installation information, there can be critical error in additional functions such as power distribution.***
- ◆ ***Make sure that tracking information matches to actual installation information after tracking.***

Disconnect all devices

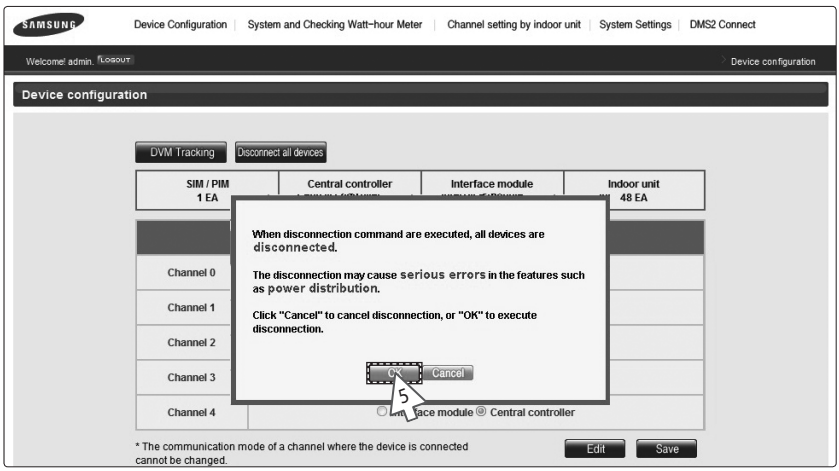
Function

Initialize searched device status in BACnet Gateway.
Monitoring and controlling of all the connected devices to BACnet Gateway will be stopped when you use this function.

- ◆ Connect searched device to the other channel and execute tracking. If the other device is searched in the channel you want to use, use 'Disconnect all devices'function.
- ◆ If you use this function, BACnet Gateway device connection status will be initialized.



1	Click [Device Configuration].
2	Click [Disconnect all devices].
3	Enter administrator's password.
4	Click [OK].



5 When the information window pops up, you must check the information and click [OK] to continue.

6 When message with "Reading data from DMS. Please wait" appears and all the devices are disconnected, page will be refreshed.

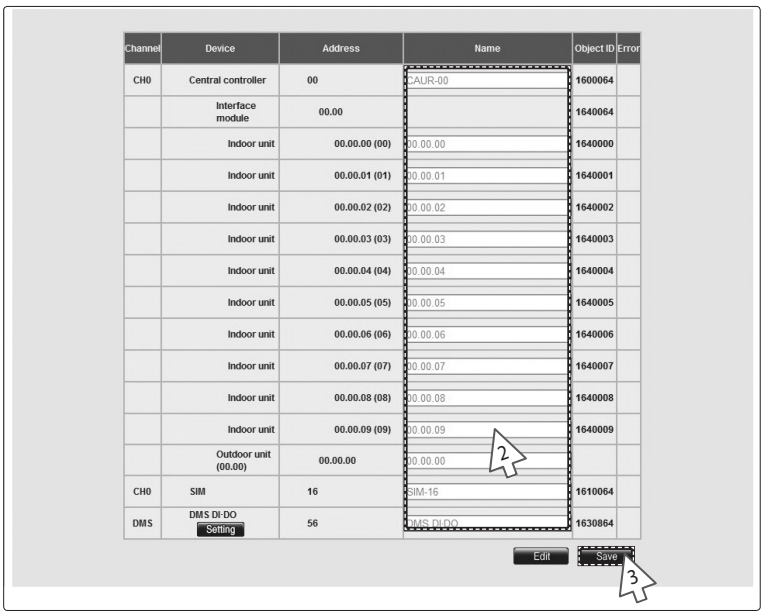
Note

- ◆ ***After executing 'Disconnect all device function', device search status of BACnet Gateway will be initialized.***
- ◆ ***You should execute tracking again after using disconnect all devices function.***

Renaming the devices

1 From the list of devices searched by tracking, click [Edit] in the bottom of the list.
◆ [Edit] will be changed to [Cancel].

Note ***If you click [Cancel] button, [Cancel] button will be switched to [Edit] button and the changed name of devices will be restored to original name.***



2 Enter the name of the devices when the text box enables.

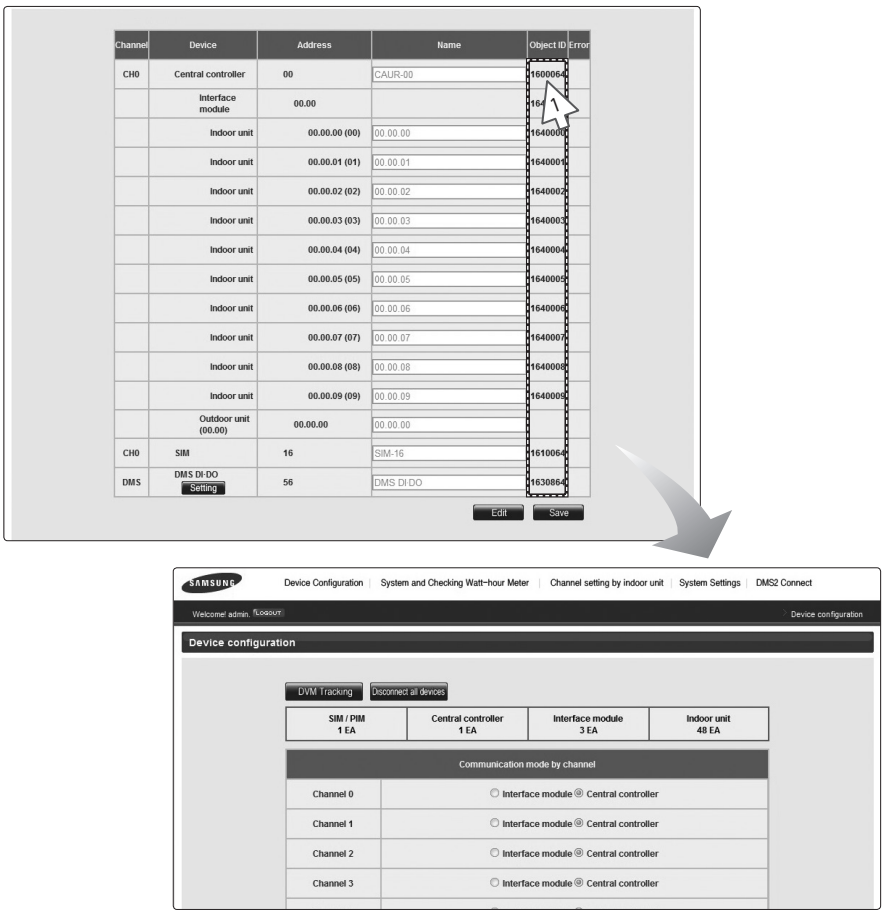
◆ You cannot use special characters within the device name.

3 Click [Save] after setting is completed.

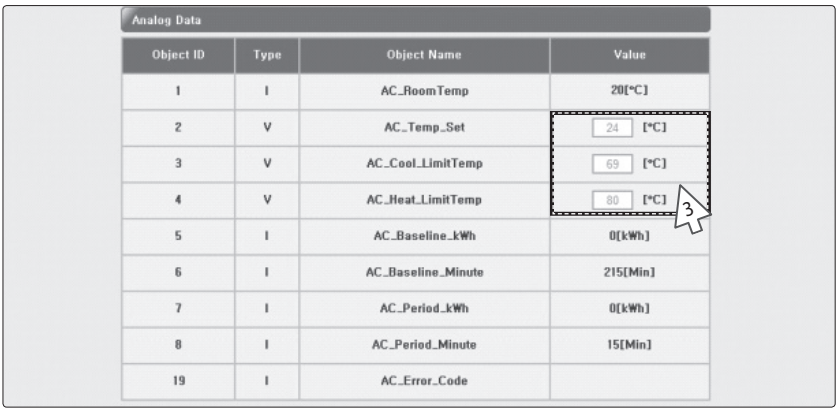
◆ If you click [Cancel], text boxes will be disabled and the [Cancel] button will be switched to [Edit].

4 When message with "Reading data from DMS. Please wait" appears saving is completed. Then, 'Tracking' screen appears again as all items are disabled.

Checking device information



1 Click one of the Object ID from 'Object ID' column.
Detail information of the selected device will be displayed in device information.

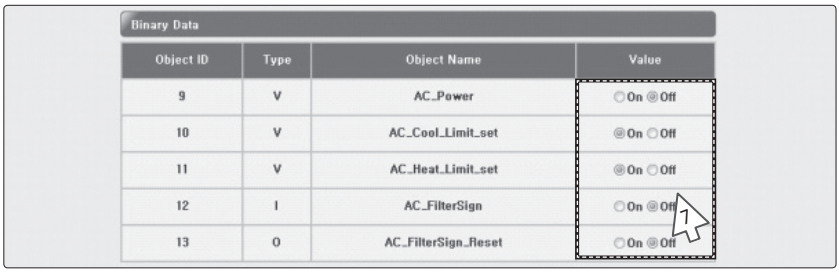


2 Analog data of the selected device will be displayed in Analog data.
- ◆ Object ID: Displays ID of the corresponding object.
- ◆ Type: Displays type of the corresponding object.
  - I: Input (Read Only)
  - O: Output (Read/Write)
  - V: Value (Read/Write)
- ◆ Object Name: Displays the name of the corresponding object.
- ◆ Value: Displays the current value of the corresponding object.
  - Unit will be displayed between [ ].

3 You can enter numbers to modify the Output type objects. Click [Edit] button on the bottom of the 'Device configuration' screen and enter the value when the text box enables.

4 Click [Save] after setting is completed.
- ◆ If you click [Cancel], text boxes will be disabled and the [Cancel] button will be switched to [Edit].

5 When message with "Reading data from DMS. Please wait" appears saving is completed. Then, 'Device configuration' screen appears again as all items are disabled.



6 Binary data of the selected device will be displayed in Binary data.

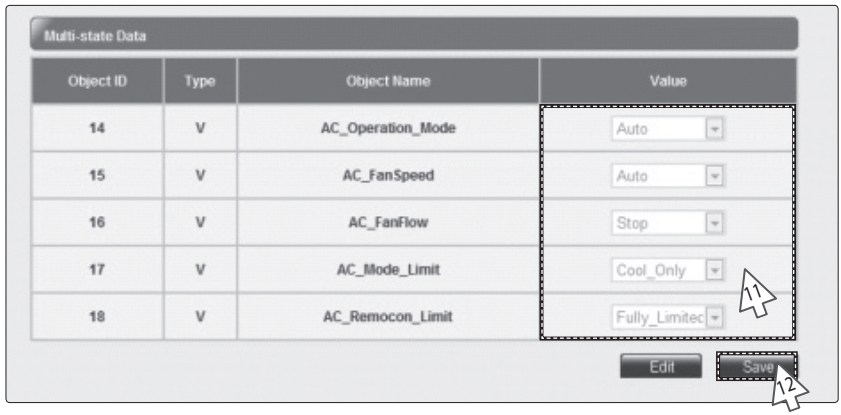
- ◆ Object ID: Displays ID of the corresponding object.
- ◆ Type: Displays type of the corresponding object.
  - I: Input (Read Only)
  - O: Output (Read/Write)
  - V: Value (Read/Write)
- ◆ Object Name: Displays the name of the corresponding object.
- ◆ Value: Displays the current value of the corresponding object.
  - It will be displayed either On or Off

7 You can select the values to modify the Output type objects. Click [Edit] button on the bottom of the 'Device configuration' screen and select the value from On or Off when the button enables.

8 Click [Save] after setting is completed.

- ◆ If you click [Cancel], buttons will be disabled and the [Cancel] button will be switched to [Edit].

9 When message with "Reading data from DMS. Please wait" appears saving is completed. Then, 'Device configuration' screen appears again as all items are disabled.



10 Multi-state Data of the selected device will be displayed in Multi-state data.

- ◆ Object ID: Displays ID of the corresponding object.
- ◆ Type: Displays type of the corresponding object.
  - I: Input (Read Only)
  - O: Output (Read/Write)
  - V: Value (Read/Write)
- ◆ Object Name: Displays the name of the corresponding object.
- ◆ Value: Displays the current value of the corresponding object.

11 You can select the values to modify the Output type objects. Click [Edit] button on the bottom of the 'Device configuration' screen and select the value when the list box enables.

12 Click [Save] after setting is completed.

- ◆ If you click [Cancel], buttons will be disabled and the [Cancel] button will be switched to [Edit].

13 When message with "Reading data from DMS. Please wait" appears saving is completed. Then, 'Device configuration' screen appears again as all items are disabled.

Note ***Please refer to BACnet Point List to check the device configuration data for each device (Refer to page 54~59).***

BACnet Protocol Implementation Conformance Statement

Date: May 24. 2010

Vendor Name: SAMSUNG Electronics CO., Ltd.

Product Name: DMS BACnet Gateway

Product Model Number: MIM-B17

Application Software Version: 1.0 **Firmware Revision:** 1.0 **BACnet Protocol Revision:** 2.0

Product Description:

This product supports BACnet/IP and provide functions to monitor and control status of air conditionerss.

BACnet Standardized Device Profile (Annex L):

☐ **BACnet Operator Workstation (B-OWS)**

☐ **BACnet Advanced Operator Workstation (B-AWS)**

☐ **BACnet Operator Display (B-OD)**

☐ **BACnet Building Controller (B-BC)**

☐ **BACnet Advanced Application Controller (B-AAC)**

■ **BACnet Application Specific Controller (B-ASC)**

☐ **BACnet Smart Sensor (B-SS)**

☐ **BACnet Smart Actuator (B-SA)**

List all BACnet Interoperability Building Blocks Supported (Annex K):

	SUPPORTED BIBBS	BIBB NAME	SUPPORTED	REMARKS
Data Sharing	DS-RP-A	Data Sharing-ReadProperty-A	☐	
	DS-RP-B	Data Sharing-ReadProperty-B	■	
	DS-RPM-A	Data Sharing-ReadPropertyMultiple-A	☐	
	DS-RPM-B	Data Sharing-ReadPropertyMultiple-B	■	
	DS-RPC-A	Data Sharing-ReadPropertyConditional-A	☐	
	DS-RPC-B	Data Sharing-ReadPropertyConditional-B	☐	
	DS-WP-A	Data Sharing-WriteProperty-A	☐	
	DS-WP-B	Data Sharing-WriteProperty-B	■	
	DS-WPM-A	Data Sharing-WritePropertyMultiple-A	☐	
	DS-WPM-B	Data Sharing-WritePropertyMultiple-B	■	
	DS-COV-A	DataSharing-COV-A	☐	
	DS-COV-B	DataSharing-COV-B	■	
	DS-COVP-A	DataSharing-COVP-A	☐	
	DS-COVP-B	DataSharing-COVP-B	☐	
	DS-COVU-A	DataSharing-COV-Unsolicited-A	☐	
	DS-COVU-B	DataSharing-COV-Unsolicited-B	☐	

	SUPPORTED BIBBS	BIBB NAME	SUPPORTED	REMARKS
Alarm and Event Management	AE-N-A	Alarm&Event-Notification-A	☐	
	AE-N-I-B	Alarm&Event-Notification Internal-B	☐	
	AE-N-E-B	Alarm&Event-Notification External-B	☐	
	AE-ACK-A	Alarm&Event-ACK-A	☐	
	AE-ACK-B	Alarm&Event-ACK-B	☐	
	AE-ASUM-A	Alarm&Event-Summary-A	☐	
	AE-ASUM-A	Alarm&Event-Summary-B	☐	
	AE-ESUM-A	Alarm&Event-Enrollment Summary-A	☐	
	AE-ESUM-B	Alarm&Event-Enrollment Summary-B	☐	
	AE-INFO-A	Alarm&Event-Information-A	☐	
	AE-INFO-B	Alarm&Event-Information-B	☐	
	AE-LS-A	Alarm&Event-LifeSafety-A	☐	
	AE-LS-B	Alarm&Event-LifeSafety-B	☐	
Scheduling	SCHED-A	Scheduling-A	☐	
	SCHED-I-B	Scheduling-Internal-B	☐	
	SCHED-E-B	Scheduling-External-B	☐	
Trending	T-VMT-A	Viewing and Modifying Trends-A	☐	
	T-VMT-I-B	Viewing and Modifying Trends Internal-B	☐	
	T-VMT-E-B	Viewing and Modifying Trends External-B	☐	
	T-ATR-A	Automated Trend Retrieval-A	☐	
	T-ATR-B	Automated Trend Retrieval-B	☐	
	T-VMMV-A	Viewing and Modifying Multiple Values-A	☐	
	T-VMMV-I-B	View and Modifying Multiple Values Internal-B	☐	
	T-VMMV-E-B	View and Modifying Multiple Values External-B	☐	
	T-AMVR-A	Automated Multiple Value Retrieval-A	☐	
	T-AMVR-B	Automated Multiple Value Retrieval-B	☐	
Device and Network Management	DM-DDB-A	Dynamic Device Binding-A	☐	
	DM-DDB-B	Dynamic Device Binding-B	■	
	DM-DOB-A	Dynamic Object Binding-A	☐	
	DM-DOB-B	Dynamic Object Binding-B	■	
	DM-DCC-A	DeviceCommunicationControl-A	☐	
	DM-DCC-B	DeviceCommunicationControl-B	☐	
	DM-TM-A	Text Message-A	☐	
	DM-TM-B	Text Message-B	☐	
	DM-TS-A	Time Synchronization-A	☐	
	DM-TS-B	Time Synchronization-B	■	
	DM-UTC-A	UTCTime Synchronization-A	☐	
	DM-UTC-B	UTCTime Synchronization-B	☐	
	DM-RD-A	ReinitializeDevice-A	☐	
	DM-RD-B	ReinitializeDevice-B	☐	
	DM-BR-A	Backup&Restore-A	☐	
	DM-BR-B	Backup&Restore-B	☐	

	SUPPORTED BIBBS	BIBB NAME	SUPPORTED	REMARKS
Device and Network Management	DM-R-A	Restart-A	☐	
	DM-R-B	Restart-B	☐	
	DM-LM-A	List Manipulation-A	☐	
	DM-LM-B	List Manipulation-B	☐	
	DM-OCD-A	Object Creation & Deletion-A	☐	
	DM-OCD-B	Object Creation & Deletion-B	☐	
	DM-VT-A	Virtual Terminal-A	☐	
	DM-VT-B	Virtual Terminal-B	☐	
	NM-CE-A	Connection Establishment-A	☐	
	NM-CE-B	Connection Establishment-B	☐	
	NM-RC-A	Router Configuration-A	☐	
	NM-RC-B	Router Configuration-B	☐	

Segmentation Capability:

☐ **Segmented requests supported Window Size** _____

☐ **Segmented responses supported Window Size** _____

Standard Object Types Supported:

Object-Type	Supported	Dynamically Creatable	Dynamically Deletable	Writeable Properties
Analog Input	☑	☐	☐	Present value
Analog Output	☐	☐	☐	Present value
Analog Value	☑	☐	☐	Present value
Binary Input	☑	☐	☐	Present value
Binary Output	☑	☐	☐	Present value
Binary Value	☑	☐	☐	Present value
Calendar	☐	☐	☐	
Command	☐	☐	☐	
Device	Yes	n/a	n/a	n/a
Event Enrollment	☐	☐	☐	
File	☐	☐	☐	
Group	☐	☐	☐	
Loop	☐	☐	☐	
Multi-state Input	☐	☐	☐	Present value
Multi-state Output	☐	☐	☐	Present value
Multi-state Value	☑	☐	☐	Present value
Notification Class	☐	☐	☐	
Program	☐	☐	☐	
Schedule	☐	☐	☐	

BACnet Protocol Implementation Conformance Statement (Continued)

Data Link Layer Options:

■ **BACnet IP, (Annex J)**
☐ **BACnet IP, (Annex J), Foreign Device**
☐ **ISO 8802-3, Ethernet (Clause 7)**
☐ **ANSI/ATA 878.1, 2.5 Mb. ARCNET (Clause 8)**
☐ **ANSI/ATA 878.1, RS-485 ARCNET (Clause 8), baud rate(s)** _____
☐ **MS/TP master (Clause 9), baud rate(s):** _____
☐ **MS/TP slave (Clause 9), baud rate(s):** _____
☐ **Point-To-Point, EIA 232 (Clause 10), baud rate(s):** _____
☐ **Point-To-Point, modem, (Clause 10), baud rate(s):** _____
☐ **LonTalk, (Clause 11), medium:** _____
☐ **BACnet/ZigBee (ANNEX O)**
☐ **Other:** _____

Device Address Binding:

Is static device binding supported? (This is currently necessary for two-way communication with MS/TP slaves and certain other devices.) ☐Yes ■ No

Networking Options:

☐ Router, Clause 6 - List all routing configurations, e.g., ARCNET-Ethernet, Ethernet-MS/TP, etc.
☐ Annex H, BACnet Tunneling Router over IP
☐ BACnet/IP Broadcast Management Device (BBMD)
Does the BBMD support registrations by Foreign Devices? ☐ Yes ☐ No
Does the BBMD support network address translation? ☐ Yes ☐ No

Character Sets Supported:

Indicating support for multiple character sets does not imply that they can all be supported simultaneously.

■ ANSI X3.4 ☐ IBM™/Microsoft™ DBCS ☐ ISO 8859-1
☐ ISO 10646 (UCS-2) ☐ ISO 10646 (UCS-4) ☐ JIS 0208

If this product is a communication gateway, describe the types of non-BACnet equipment/ networks(s) that the gateway supports:

This gateway switches SAMSUNG air conditioner protocol to BACnet protocol to make RS-485 communication possible with the air conditioners connected to gateway.

Standard Object Types Supported

Object Type	Support	Description
Analog Input	■	[Indoor temperature], [The power value after the basic date], [The number of hours usage of an indoor unit after the basic date], [Power value within period], [The number of hours usage of an indoor unit within period], [Indoor unit error code], [Centralized controller error code], [Interface module error code], [SIM interface module error code], [DMS status], [DMS error]
Analog Output	□	
Analog Value	■	[Set temperature], [Setting lower temperature limit], [Setting upper temperature limit]
Averaging	□	
Binary Input	■	[DI], [Filter sign status]
Binary Output	■	[DO], [Filter sign reset]
Binary Value	■	[Power On/Off control] [Setting the fucntion of limiting lower temperature] [Setting the function of limiting upper temperatue]
Calendar	□	
Command	□	
Device	■	[DMS], [A/C Indoor Unit], [ERV], [AHU], [SIM], [Centralized controller], [Interface module], [DDC]
Event Enrollment	□	
File	□	
Group	□	
Life Safety Point	□	
Life Safety Zone	□	
Loop	□	
Multi-state Input	□	
Multi-state Output	□	
Multi-state Value	■	[Operation mode control], [Fan speed control], [Air flow direction control], [Setting Cool only/ Heat only/ No Limit], [Control Enable RC/ Disable RC / Level1]
Notification Class	□	
Program	□	
Pulse Converter	□	
Schedule	□	
Trend Log	□	
Access Door	□	
Event Log	□	
Load Control	□	
Structured View	□	
Trend Log Multiple	□	

Device

Following table shows regulation of device ID and they are created automatically.

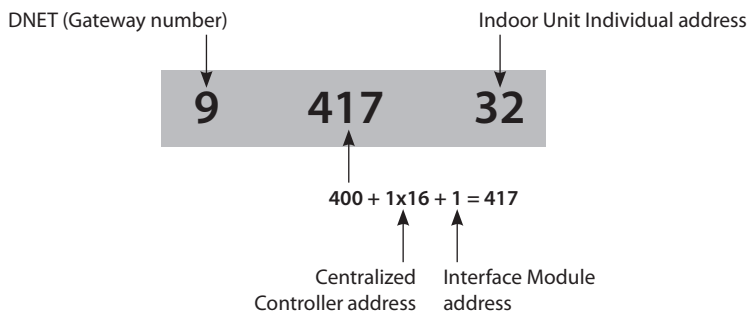
Item	DNET – Range [Digit 2]	CPP – Range [Digit 3]	INDOOR – Range [Digit 2]
Centralized Controller	0~15	000~015	64
SIM	0~15	100~115	64
DMS DI/DO	0~15	300~315	64
Interface Module	0~15	400~655 (16 x 16)	64
Indoor Unit ERV AHU kit	0~15	400~655	0~63
Gateway	0~15	900	64

Ex) Indoor Unit

DNET (Gateway number): 9

Indoor Unit Address: 01.01.32

Device ID: 941732



◆ **Object of device**

Refer to BACnet point List

Indoor Unit

Single indoor unit has following point list.

Instance Number	Object	Object Type	Object Name	Unit	Status value			
				Inactive	Active			
				Text-1	Text-2	Text-3	Text-4	Text-5
1	Indoor Temperature	AI	AC_RoomTemp_xx_xxxxxx	℃				
2	Set temperature	AV	AC_Temp_Set_xx_xxxxxx	℃				
3	Setting lower temperature limit	AV	AC_Cool_LimitTemp_xx_xxxxxx	℃				
4	Setting upper temperature limit	AV	AC_Heat_LimitTemp_xx_xxxxxx	℃				
5	The power value of an indoor unit after the basic date	AI	AC_Baseline_kWh_xx_xxxxxx	kWh				
6	The number of hours usage of an indoor unit after the basic date	AI	AC_Baseline_Minute_xx_xxxxxx	Minute				
7	Power value within period	AI	AC_Period_kWh_xx_xxxxxx	kWh				
8	The number of hours usage of an indoor unit within period	AI	AC_Period_Minute_xx_xxxxxx	Minute				
9	Power On/Off	BV	AC_Power_xx_xxxxxx	Off	On			
10	Applying lower temperature limit setting	BV	AC_Cool_Limit_set_xx_xxxxxx	Off	On			
11	Applying upper temperature limit setting	BV	AC_Heat_Limit_set_xx_xxxxxx	Off	On			
12	Filter sign status	BI	AC_FilterSign_xx_xxxxxx	Off	On			
13	Filter sign reset	BO	AC_FilterSign_Reset_xx_xxxxxx	Off	On			
14	Operation mode status	MV	AC_Operation_Mode_xx_xxxxxx	Auto	Cool	Heat	Fan	Dry
15	Fan speed status	MV	AC_FanSpeed_xx_xxxxxx	Auto	Low	Mid	High	
16	Air flow direction status	MV	AC_FanFlow_xx_xxxxxx	Stop	UpDown	LeftRight	UpDown/ LeftRight	
17	Operation mode limit status	MV	AC_Mode_Limit_xx_xxxxxx	No Limt	Cool Only	Heat Only		
18	Remote controller limit status	MV	AC_Remocon_Limit_xx_xxxxxx	Work	Fully Limited	Power On Limited		
19	Integrated error code of both indoor unit and outdoor unit	AI	AC_Error_Code_xx_xxxxxx	Refer to list of error code				

❊ Temperature setting range can be different depending on the model and the common range is as follows:

Auto: 18˚C~30˚C
Cool: 18˚C~30˚C
Heat: 16˚C~30˚C
Fan: Temperature cannot be adjusted
Dry: 18˚C~30˚C

AHU Kit

Single AHU unit has following point list.

Instance Number	Object	Object Type	Object Name	Unit	Status value			
				Inactive	Active			
				Text-1	Text-2	Text-3	Text-4	Text-5
1	Indoor Temperature	AI	AHU_RoomTemp_xx_xxxxxx	°C				
2	Set temperature	AV	AHU_Temp_Set_xx_xxxxxx	°C				
3	Setting lower temperature limit	AV	AHU_Cool_LimitTemp_xx_xxxxxx	°C				
4	Setting upper temperature limit	AV	AHU_Heat_LimitTemp_xx_xxxxxx	°C				
5	The power value of an indoor unit after the basic date	AI	AHU_Baseline_kWh_xx_xxxxxx	kWh				
6	The number of hours usage of an indoor unit after the basic date	AI	AHU_Baseline_Minute_xx_xxxxxx	Minute				
7	Power value within period	AI	AHU_Period_kWh_xx_xxxxxx	kWh				
8	The number of hours usage of an indoor unit within period	AI	AHU_Period_Minute_xx_xxxxxx	Minute				
9	Power On/Off	BV	AHU_Power_xx_xxxxxx	Off	On			
10	Applying lower temperature limit setting	BV	AHU_Cool_Limit_set_xx_xxxxxx	Off	On			
11	Applying upper temperature limit setting	BV	AHU_Heat_Limit_set_xx_xxxxxx	Off	On			
12	Filter sign status	BI	AHU_FilterSign_xx_xxxxxx	Off	On			
13	Filter sign reset	BO	AHU_FilterSign_Reset_xx_xxxxxx	Off	On			
14	Operation mode status	MV	AHU_Operation_Mode_xx_xxxxxx	Auto	Cool	Heat	Fan	Dry
15	Operation mode limit status	MV	AHU_Mode_Limit_xx_xxxxxx	No Limt	Cool Only	Heat Only		
16	Remote controller limit status	MV	AHU_Remocon_Limit_xx_xxxxxx	Work	Fully Limited	Power On Limited		
17	Integrated error code of both indoor unit and outdoor unit	AI	AHU_Error_Code_xx_xxxxxx	Refer to list of error code				

ERV

Single ERV unit has following point list.

Instance Number	Object	Object Type	Object Name	Unit	Status value			
				Inactive	Active			
				Text-1	Text-2	Text-3	Text-4	Text-5
1	Power On/Off operation	BV	ERV_Power_xx_xxxxxx	Off	ON			
2	Filter sign status	BI	ERV_FilterSign_xx_xxxxxx	Off	ON			
3	Filter sign reset	BO	ERV_FilterSign_Reset_xx_xxxxxx	Off	ON			
4	Operation mode status	MV	ERV_Operation_Mode_xx_xxxxxx	Auto	HeatEx	Bypass	Sleep	
5	Fan speed status	MV	ERV_FanSpeed_xx_xxxxxx	Low	High	Turbo		
6	Remote controller limit status	MV	ERV_Remocon_Limit_xx_xxxxxx	Work	Fully Limited	Power On Limited		
7	Integrated error code of ERV unit	AI	ERV_Error_Code_xx_xxxxxx	Refer to list of error code				

SIM

Single SIM has following point list.

Instance Number	Object	Object Type	Object Name	Status value
1	SIM error code	AI	SIM_Error_Code	Refer to list of error code

Centralized controller

Single Centralized controller has following point list.

Instance Number	Object	Object Type	Object Name	Status value
1	Centralized controller error code	AI	Central_Error_ Code	Refer to the list of the integrated error code

Interface module

Single Interface module has following point list.

Instance Number	Object	Object Type	Object Name	Status value
1	Interface module error code	AI	Repeater_Error_ Code	Refer to the list of the integrated error code

BACnet Gateway

BACnet Gateway has following point list.

Instance	Control and Monitoring	Object Type	Object Name	Status Value
1	All device OFF	BO	ALL_OFF	Inactive : All devices Off
2	DMS2 Status	AI	DMS2_Status	0: Normal, 8: Emergency stop, 105 : Tracking in progress, 108 : Tracking failed
3	BACnet error code	AI	BACnetApp_ Error_Code	BACnet error code

CAUTION

- ***You may use ALL_OFF command to turn on all the indoor units but it is not recommended.***
- ***If communication error occurs on devices such as SIM/Centralized Controller/ Interface Module etc, other functions such as power distribution may also create a problem. You must have BMS system to check the errors and you must take action immediately.***

Other Information

Object setting when there is communication error

If any communication error occurs between the air conditioner devices, the property will be set as below.

1. Reliability property will be set as COMMUNICATION_FAILURE.
2. Fault / Alarm flag of Status_Flags property will be set as TRUE.
3. Present_Value property is readable but the value is not guaranteed.

Object setting when there is general error

If any air conditioner related error occurs, the property will be set as below.

1. The Reliability property value of each object will be set as UNRELIABLE_OTHER.
2. FAULT / Alarm flag of Status Flags property will be set as TRUE.

Main service

Time setting

Time synchronization Service is a service that allows the time of BACnet Gateway to be synchronized with the time of PC.

COV (Change Of Value)

COV service is supported and you can set confirmed or unconfirmed COV.
You can set lifetime value.

CAUTION

COV registration information will disapper when a BACnet gateway is switched off. The reserved value caused by the power supply problem is not guaranteed according to the BACnet regulation.

Memo

SAMSUNG